DAIKIN

DAIKIN APPLIED UK

Technically better...

EWAD-TZB

Inverter Screw Chiller

High efficiency chiller for comfort and process cooling

AHUs

CHILLERS

PROJECTS

SERVICE

Why choose

Daikin Applied?

Daikin Applied were the among first to pioneer the use of inverters in air cooled screw chillers, and today, our next generation of inverter technology makes both comfort and process cooling even more efficient and cost-effective.

With the highest efficiency at both partial and full load, installers and building owners can give end-users better results all year round comfort with lower noise levels and higher energy efficiency than ever before.

For over a decade, hundreds of sites around the world have relied on Daikin Applied inverter driven single screw compressors to reduce their running costs without compromising on climate comfort or performance.

With the EWAD-TZB chiller, Daikin Applied has once again improved the chiller performances by increasing the efficiency of the in-house developed compressor with integrated inverter: VVR technology, DC motors.

Further improvements are made by introducing new technologies such as micro-channel condenser coils and advanced electronic expansion valves.

EWAD-TZB

High performance energy efficient comfort cooling

Features

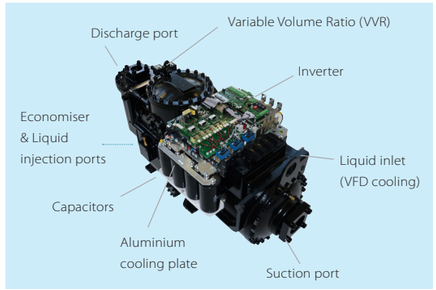
EWAD-TZB chiller series

1 Top class efficiency:

EER up to 3.6
ESEER up to 5.5

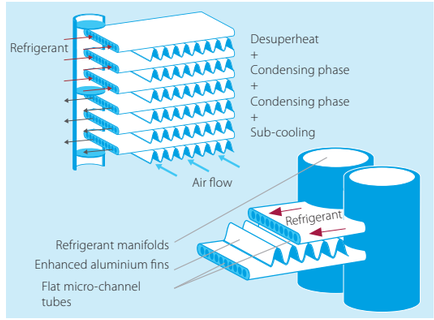
Best choice for every application

Rapid payback: 1 year for process cooling and 3 years for comfort cooling applications



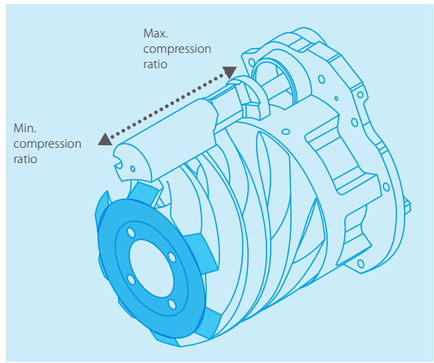
☑ New generation of Daikin inverter screw compressors

› Integrated inverter, refrigerant cooled
› Variable volume ratio technology



☑ Micro-channel condenser coils

› High thermal efficiency
› Small volume, resulting in a small refrigerant charge
› Light & durable design
› Easy cleaned



☑ VVR (Variable Volume Ratio)

The operating conditions of a chiller are subjected to sensible changes due to the variation of ambient temperature and load request from the plant.

Screw compressors increase the pressure of the refrigerant by forcing it into a progressive smaller volume, from the suction to the discharge port.
Once that the geometry of the compressor is defined the volume ratio is also defined.

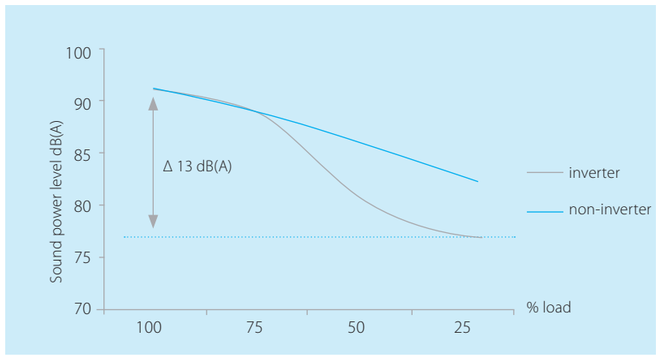
Daikin compressors can modify their own geometry thanks to variable volume ratio (VVR).
The volume ratio will change by moving the sliding valves. VVR changes the point at which the gas leaves the compressor, and therefore changes the pressures at discharge which will be optimised for any condition.

Providing a lifetime of comfort in the most flexible way

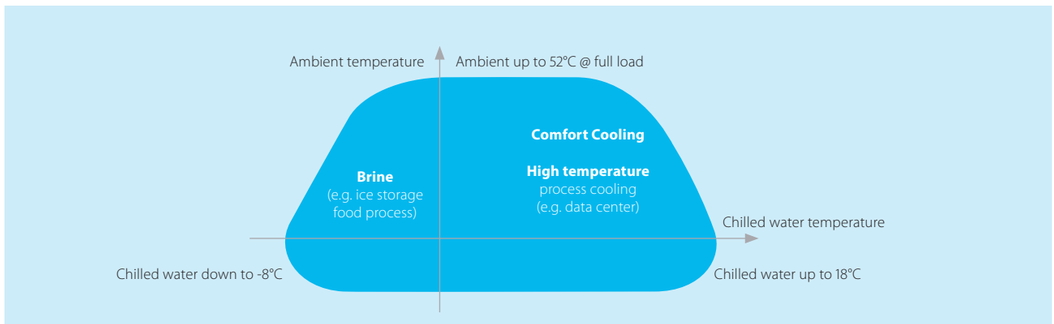
2 Silent operation – for distraction-free work

Nothing disrupts the workplace more than the sound of machinery. So our engineers have brought the sound power levels right down to just 90 dB(A)* at full load operating conditions - and even lower at part load conditions. Thanks to the special acoustic solutions on the compressor and a custom Daikin fan design with reduced noise impact and vibration, the EWAD-TZB is ideal for even the most sound-sensitive environment.

*400 kW size



3 Application flexibility



4 Compact design

The EWAD-TZ keeps installation space at a minimum, so it's ideal for both new and retrofit projects. In particular, the highly efficient compressor with its integrated inverter allows us to mount more compact heat exchangers in the frame and, combined with the integrated compact control panel, deliver more power from a reduced footprint.

5 Simple to install. Even simpler to maintain

Our chillers are wired at the factory and are also pre-commissioned, with the unit's software tuned and set points already established. They also integrate easily with existing building management systems. So, on site, all that is required is to plug the unit into the power supply, connect any pipes and wires, and switch the unit on.

6 Proven reliability

All our chillers and compressors are subjected to intensive performance, acoustic, endurance and vibration tests in Daikin factories and at selected job-sites - even at extreme working conditions. To ensure maximum reliability in every component – and the right, lifelong technical solution for your application.

7 Extensive options list

› **Rapid restart** - when a loss of cooling would be catastrophic, the chiller can restart within 30 seconds of the power being restored and reach full-load cooling capacity in less than 6 minutes.

› **VFD pumps** - variable frequency pumps can be used to optimise the working efficiency of the chiller and thus maximise energy savings, also in primary only variable flow systems.

› **Refrigerant leak detection** - rapid advanced warning of trouble, so you can avoid any environmentally harmful and potentially costly leaks in the refrigerant system. BREEAM Compliant.

› **Heat recovery** - a plate to plate heat exchanger for each refrigerant circuit is installed in series to the condenser coil. 15 to 85 % of the total heat rejection of the chiller can be recovered

› **Partial heat recovery** - a plate to plate heat exchanger for each refrigerant circuit is installed in series to the air condenser coil. The plant manager controls the operation of the pump on the recovery circuit. 15 to 20 % of the total heat rejection of the chiller can be recovered

› **Smart sequencing capability** - master/slave sequencing function up to 4 units connected together for system optimisation and without the need of external control systems.

Technical Specifications

Cooling only				EWAD-TZSRB	160	190	240	270	300	360	380	450	495	570	610	660	700	820	900	990	C10	C11
Cooling capacity	Nom.			kW	169	201	235	269	306	351	394	455	499	569	610	659	700	800	895	956	1,013	1,067
Power input	Cooling	Nom.		kW	56.5	69.9	83	89.9	108	119	140	164	175	199	218	240	250	247.8	294.1	316	335.6	358.9
EER					2.99	2.87	2.83	2.99	2.82	2.95	2.81	2.76	2.85	2.86	2.80	2.74	2.80	3.229	3.043	3.016	3.018	2.973
ESEER					4.37	4.46	4.30	4.40	4.42	4.50	4.44	4.43	4.47	4.53	4.61	4.60	4.68	4.8		4.85	4.83	4.98
Dimensions	Unit	Height		mm	2,483															2,482		
		Width		mm	2,258																	
		Depth		mm	2,283			3,183			4,083		4,983		5,883		6,783	7,783		8,820	9,591	10,461
Weight	Unit			kg	2,166	2,191	2,249	2,475	2,522	2,871	4,244	4,260	4,517	4,803	4,980	5,004	5,274	6,964	6,862	7,217	7,495	7,820
	Operation weight			kg	2,186	2,217	2,287	2,501	2,560	2,921	4,402	4,424	4,675	4,961	5,250	5,259	5,529	7,247	7,347	7,702	7,980	8,273
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube											
	Water flow rate	Cooling	Nom.	l/s	8.1	9.6	11.2	12.9	14.6	16.8	18.8	21.7	23.9	27.2	29.2	31.5	33.5	38.3	42.8	45.7	48.5	51
	Water pressure drop	Cooling	Nom.	kPa	25.0	19.3	15.4	32.6	25.2	25.9	25.8	32.2	43.9	55.5	38.6	32.2	35.9	52.1	36.3	41	45.6	36.3
	Water volume			l	20	26	37	26	37	50	158	164	158		270	255		283		485		453
Air heat exchanger	Type				Microchannel																	
Compressor	Type				Inverter driven single screw compressor																	
	Quantity				1						2											
Fan	Type				Direct propeller																	
	Quantity				4			6			8		10		12		14	16		18	20	22
	Air flow rate	Cooling	Nom.	l/s	15,109			22,664		30,219	29,650		36,920		44,475		51,745	59,299		66,570	74,124	81,394
	Speed			rpm	700																	
Sound power level	Cooling	Nom.		dBA	86	87		88			90			91		92		94		95		
Sound pressure level	Cooling	Nom.		dBA	67	68			69	70	70			70		71		73				
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~47													-18~45				
	Water side	Cooling	Min.~Max.	°CDB	-8~18													-15~20				
Refrigerant	Type/GWP				R-134a/1,430																	
	Circuits	Quantity			1						2											
Refrigerant charge	Per circuit			kg	27	29	33	38	41	52	29	29.5	34	37.5	38.5	41.5	45	52		58.5	65	71.5
				TCO_2eq	39	41	47	54	59	74	41	42	49	54	55	59	64	74.36		83.655	92.95	102.245
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400																	

Cooling only				EWAD-TZXRB	190	220	240	290	320	360	420	450	540	570	610	660	680	770	850	910	C10	C11
Cooling capacity	Nom.			kW	180	211	240	277	313	360	417	472	528	562	599	639	677	764	850	912	1,001	1,045
Power input	Cooling	Nom.		kW	52.1	63.2	72.5	83.9	100	109	132	145	164	181	192	203	220	226.5	266.8	275.4	303.1	320.6
EER					3.46	3.34	3.30	3.13	3.29	3.16	3.24	3.22	3.09	3.11	3.15	3.07		3.373	3.186	3.311	3.302	3.26
ESEER					5.11	5.06	4.99	5.09	5.13	5.12	5.09	4.99	5.04	5.05	5.13	5.07		5.09		5.13	5.15	5.22
Dimensions	Unit	Height		mm	2,483													2,482				
		Width		mm	2,258																	
		Depth		mm	3,183			4,083			4,983			5,883		6,783	7,683	7,783		8,820	9,591	10,461
Weight	Unit			kg	2,462	2,509	2,521	2,870			4,492	4,802	5,000	5,272	5,625			6,946	6,862	7,217	7,495	7,820
	Operation weight			kg	2,488	2,547	2,559	2,920			4,650	4,960	5,255	5,527	5,880			7,247	7,347	7,702	7,980	8,273
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube							Shell and tube				
	Water flow rate	Cooling	Nom.	l/s	8.6	10.1	11.5	13.2	15.0	17.2	20.0	22.6	25.3	26.9	28.6	30.5	32.4	36.6	40.7	43.6	47.9	50.0
	Water pressure drop	Cooling	Nom.	kPa	16.4	13.2	16.2	17.1	21.0	34.2	31.2	39.7	36.6	41.0	27.1	30.4	33.2	40.3	33.3	37.3	42.3	34.2
	Water volume			l	26	37		50			158			255				301		485		453
Air heat exchanger	Type				Microchannel																	
Compressor	Type				Inverter driven single screw compressor																	
	Quantity				1						2											
Fan	Type				Direct propeller																	
	Quantity				6			8		10		12		14		16				18	20	22
	Air flow rate	Nom.		l/s	22,664			30,219		36,920	37,774	44,475		51,745		59,299				66,570	74,124	81,394
	Speed			rpm	700																	
Sound power level	Cooling	Nom.		dBA	88			89		90		91			92		94	94		95		
Sound pressure level	Cooling	Nom.		dBA	68			69		70					71			73				
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~50																	
	Water side	Cooling	Min.~Max.	°CDB	-8~18													-15~20				
Refrigerant	Type / GWP				R-134a/1,430																	
	Circuits	Quantity			1					2												
Refrigerant charge	Per circuit			kg	36	39	40	51		32	37	40.0	44.5	48		52.00				58.5	65	71.5
				TCO_2eq	51	56	57	73		46	53	57	64	69		74.36				83.65	92.95	102.245
Piping connections	Evaporator water inlet/outlet (OD)				88.9mm		114.3mm			139.7mm			168.3mm				6inch"	8mm"				
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400																	

Cooling only				EWAD-TZPRB	190	220	240	290	300	350	420	495	550	620	720	820	950
Cooling capacity	Nom.			kW	187	218	247	279	317	382	437	505	543	620	717	833	950
Power input	Cooling	Nom.		kW	50.5	60.7	68.7	83.4	95.9	105	125	139	151.3	178.5	182.2	220.2	252.4
EER					3.71	3.59		3.35	3.31	3.64	3.49	3.62	3.59	3.473	3.935	3.783	3.764
ESEER					5.55	5.52	5.27	5.16	5.20	5.32	5.21	5.38	5.5	5.42	5.59	5.54	5.55
Dimensions	Unit	Height		mm	2,483								2,482				
		Width		mm	2,258												
		Depth		mm	4,083				4,983	5,883	6,783		8,820	9,591		10,461	11,233
Weight	Unit			kg	2,858		2,869	2,870	3,120	4,935	5,269	5,277	6,620	6,648	7,735	8,028	8,357
	Operation weight			kg	2,908		2,919	2,920	3,170	5,190	5,524	5,532	6,927	6,955	8,220	8,513	8,810
Water heat exchanger	Type				Plate heat exchanger					Single pass shell & tube							
	Water flow rate	Cooling	Nom.	l/s	9.0	10.4	11.8	13.3	15.2	18.3	20.9	24.2	26	29.6	34.3	39.8	45.4
	Water pressure drop	Cooling	Nom.	kPa	10.6	11.0	13.4	17.1	21.5	20.4	26.4	33.2	19.8	24.9	24.2	31.7	28.9
	Water volume			l	50					255			307		485		453
Air heat exchanger	Type				Microchannel												
Compressor	Type				Inverter driven single screw compressor												
	Quantity				1					2							
Fan	Type				Direct propeller												
	Quantity				8				10	12	14	16	18	20		22	24
	Air flow rate	Cooling	Nom.	l/s	29,610				37,013	43,369	50,423	57,826	64,879	72,282		79,336	86,738
	Speed			rpm	700												
Sound power level	Cooling	Nom.		dBA	87	88	87	88	89	90		94	95				
Sound pressure level	Cooling	Nom.		dBA	67	68	67	68		69		73					
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~52								-18~55				
	Water side	Cooling	Min.~Max.	°CDB	-8~18								-15~20				
Refrigerant	Type				R-134a												
	Circuits	Quantity			1				2								
Refrigerant charge	Per circuit			kg	49		50	51	58	38.5	43	47	52.5	57	65	71.5	78
				TCO_2eq	70		72	73	83	55	61	67	75.075	81.51	92.95	102.245	111.54
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400												

Service & Maintenance

Daikin Applied Service offers full after-sales support for the maintenance and repair of ALL brands of HVAC systems including, chillers, Air Handling Units and split Air Conditioning and VRV, as well as remote monitoring and management even for the most critical installations.

Operating 24/7 throughout the UK, Daikin Applied Service offers world leading end-to-end service solutions for Facilities Managers and engineering professionals within the HVAC community. Daikin Applied Service are also well positioned to assist commercial clients with any Ground or Air Source Heat Pump service and maintenance requirements.

Service capabilities

- Flexible maintenance contracts
- 24/7 Emergency call out service
- 4 hour response time
- Site dedicated service engineers
- F-Gas Register
- Daikin on Site remote monitoring
- On site training for 'front line' service requirements
- Agreed service level requirements
- Full chiller running logs taken on every service visit
- Full spares availability & management
- Retrofiting & refurbishments

Benefits

- ALL manufacturers HVAC equipment maintained
- Lower energy use for maintained systems
- Reduce breakdown costs and business impact
- Tailor made packages to suit your business needs
- Extends the useful life-cycle of assets decreasing the need for capital replacements
- Equipment downtime is decreased and the number of major repairs are reduced

Service Packages

	BUSINESS Saver	BUSINESS Standard	BUSINESS Plus
Conforms to SFG20 maintenance standard	✓	✓	✓
F-Gas leak test	✓	✓	✓
Unit controller set points, safeties and running conditions logged	✓	✓	✓
Equipment condition report	✓	✓	✓
Four visits per annum (1 major / 3 minor)		✓	
Calibration of all sensors, probes and safety switches		✓	✓
System Diagnostics		✓	✓
Oil Analysis		✓	✓
Thermography		✓	✓
Multi-site visits & bespoke offering			✓
Daikin on Site remote monitoring			✓
1 point vibration analysis			✓
System water analysis			✓
Condenser coil cleaning			✓

REFCOM F-GAS CERTIFICATION · Chas Accredited · Constructionline Part of Capita plc · F-GAS SUPPORT · SafeContractor · BRITISH SAFETY COUNCIL Member · ISO 9001 Quality Management · ISO 14001 Environmental Management

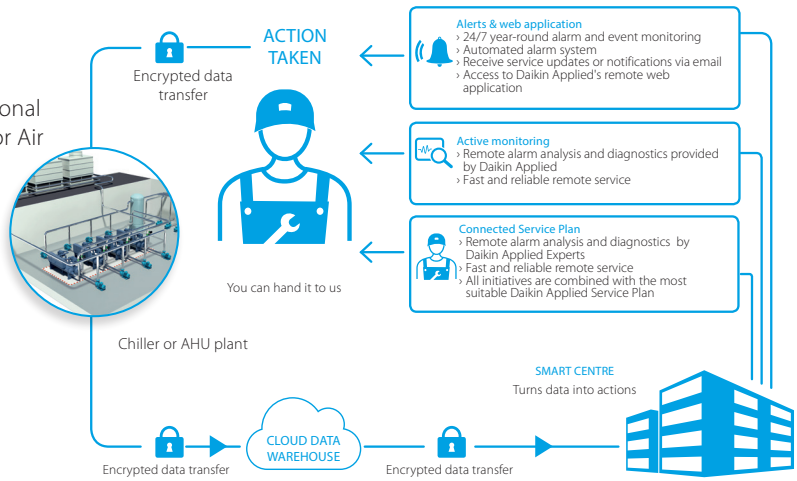
14001: EMS 539595 | 9001: FS 67147

Daikin on Site

What is Daikin on Site?

Daikin on Site (DOS) remote cloud server collects operational data from the control system of a Daikin Applied Chiller or Air Handling Unit plant.

Daikin's Smart Centre then turns this data into useful information on a web user interface.



Main features

› Increase uptime, reduce unscheduled interpretations with real time information
› Optimise efficienty and reduce energy waste
› Insight into the optimum use of equipment via trend analysis

Cloud technology to hand

Remote maintenance allows your system to be accessed any time, anywhere. All important process data collected constantly and automatically stored centrally. This gives you a decisive lead in know-how, ideal for building a sustainable business.

Always up-to-date and in control

Standard web browsers, so it's suitable for any web-compatible devices and it operates in real time.

Insight into operational data for enhanced control and reliability

Daikin Applied's remote monitoring enhances control and maintenance programmes. Diagnostics, system upgrades and settings optimisation are carried out remotely where possible. If a visit is required, the service engineer will arrive already prepared, boosting your efficiency.

Available as part of the Daikin Applied Service Business Plus package

Daikin Applied Service can adopt DoS as part of their condition based maintenance packages, offering tailored monitoring programs within the Business Plus package, refer to our service brochure for more information.

Simple, effective connection

Most Daikin Applied Chiller and AHU controllers have a built-in IP interface. This allows connection for remote monitoring either through LAN or with wireless modem communication.

High security

You can trust Daikin Applied's remote monitoring to be secure in all aspects such as data privacy, data storage security and data transport.

› All connections are encrypted (HTTPS) to prevent wiretapping and man-in-the-middle attacks
› CSA security attestation
› Data privacy conforming to EU data privacy Chapter 5
› Geo-redundant data storage in Northern Europe

Operational data insights deliver long-term savings

Daikin Applied's remote monitoring is the ideal tool for optimising maintenance and operating costs long term, and for giving you a documented view of your system's capacity requirements.

For more information email **info@daikinapplied.uk** or visit **www.daikinapplied.uk**

Daikin Applied UK

North
01670 566159
South
01322 424 950

Daikin Applied Service

North
01670 566 208
Midlands
01214 563 156
South
01322 428 092
Spares
01670 566 243

Daikin Europe N.V. participates in the Eurovent Certification programme for Liquid Chilling Packages (LCP), Air handling units (AHU), Fan coil units (FCU) and variable refrigerant flow systems (VRF) Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com